KONK, Vladimir, inz., architekt; WENCL, Zdenek, inz.

A new air station in Ruzyne. Letecky obzor 6 no.7:194-195 '62.

KON'KA, Ye.; BEKMAN, V.

Abroad. Avt.transp. 41 no.10:52-58 O '63. (MIRA 16:10)

1. Zamestitel' predsedatelya Glavnogo pravleniya professional'nogo soyuza rabochikh transporta i dorog Pol'skoy Narodnoy Respubliki (for Kon'ka).

KONKABAYEV, Ye.K.

Working and free time of miners in the Karaganda Basin and ways of its efficient us during the period of the large scale building of communist. Nauch. trudy KNIUI no.14:530-543 '64. (MIRA 18:4)

KONKASHPAYEV, O.K.

Popular Kazakh geographical terms. Izv.AN Kazakh.SSR.Ser.geog.no.3: '51. (MLRA 10:2)

(Geography--Terminology)
(Kazkah language--Glossaries, vocabularies, etc.)

K

KONKASHBAYEV, G.; AUBAKIROV, Zh.

Brief Russian-Kazakh terminological dictionary of physical geography [in Kazakh with summary in Russian]. Vest. AN Kazakh. SSR 14 no.3: 50-63 Mr '58. (MIRA 11:5)

(Physical geography--Dictionaries)
(Russian language--Dictionaries--Kazakh)

ABDRAKHMANOV, A.A., kand.filolog.nauk; DONIDZE, G.I., kand.filolog.nauk; KARMYSHEVA, Dzh.Kh., inzh.-kartograf; KONKASHBAYEV, G.K., kand. geograf.nauk; ROROKINA, Z.P., tekhn.red.

[Instructions for the Russian transcription of geographical names in the Kazakh S.S.R.] Instruktsiia po russkoi peredache geograficheskikh nazvanii Kazakhskoi SSR. Alma-Ata, Izd-vo Akad.nauk Kazakhskoi SSR, 1959. 13 p. (MIRA 13:2)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i kartografii.
(Kazakhstan--Names, Geographical)

KONKASHPAYEV, Gali Konkashpayevich; GLADYSHEVA, Ye.N., otv. red.; SHUPLOVA, M.A., red.; KHUDYAKOV, A.G., tekhn. red.

[Dictionary of Kazakh geographical names] Slovar' kazakhskikh geograficheskikh nazvanii. Alma-Ata, Izd-vo AN Kazakh. SSR, 1963. 184 p. (MIRA 16:11)
(Kazakhstan--Geography--Dictionaries)

G. KONKASHBAYEV.

Ekonomicheskaya Geografiya Kazakhskoy SSR (by) M.Sh. Yarmukhamedov (1) G. Konkashpayev. Alma-Ata, Kazakhskoye Uchpedgiz, 1960.

87 p. Illus., Maps.

Title and Text in Kazakh.

"Uchebnoye Posobiye Dlya 9 Klassa."

KONKASHPAYEV, G.K.

Some difficult ot understand geographical names in Kazakhstan.
Trudy otd. geog. AN Kazakh. SSR no.9:240-243 '62. (MIRA 15:6)
(Kazakhstan—Names, Geographical)

Konkhin, A. I.

Kulev, A. I. Konkhin, V. G. D... and ... I. Korshunova. U.S.S.R. 105,537, July 25, 1957. Fibers are produced from acrylonitrile and vinyl-base copolymers. To improve their physicomech. and textile-chem. properties methacr... acid is used as the vinyl monomer ...

M. Hosch

KONKILEV, N.

"Question on simplifying and improving the accounting system."

p. 1 (Otchetnost I Kontrol, Vol. 6, no. 12, 1957, Sofiia, Bulgaria.)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 6, June 1958.

KONKILEV, N.

Increased labor productivity, and decreased cost price in the V. Kolarov Plant for High-Voltage Equipment and the Troyan Plant for Small Electric Engines. Mashinostroene 11 no.7/8:53-54 Jl-Ag '62.

KONKIN, A.

Sports mastery is growing. Kryl.rod. 6 no.9:9 S'55. (MIRA 8:11)
(Mordovia--Parachutists--Competitions)

85-58-1-9/28

AUTHOR: Konkin, A. (Saransk)

TITLE: The Vocation of Alexander Pankov (Prizvaniye Aleksandra Pankova)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 1, pp 10-11 (USSR)

ABSTRACT: This is a biographical sketch of Alexander Pankov, sportsman-parachutist and instructor, former student at the Gomel' River Tekhnikum and Gomel' Aeroclub.

AVAILABLE: Library of Congress

Card 1/1

KONKIN, A. (Saransk)

Where are all the clubs? Kryl.rod. 11 no.1:23 Ja '60. (MIRA 13:5)
(Saransk--Airplanes--Models)

BELKIN, A.; BORISOV, A.; GENIN, B.; GUSLITSER, I.; GRUZDEV, V.; DICH,S.; DUSEYEVA, Ye.; YEGOROVA, A.; ZAK, S.; KAZYMOV, A.; KRUPENNIKOVA,Ye.; KONKIN, A.; MOGILEVSKIY, Ye.; PAKSHVER, A.; SMELKOV, G.; CHICHKHIANI, A.; CHUGUNOV, K.; SHIFRIN, L.; YUNOVICH, E.

Sergei Alekseevich Tairov. Khim.volok. no.3:79 '62. (MIRA 16:2)

(Tairov, Sergei Alekseevich)

KONKIN, A.

To hero-stratostat pilots. Kryl. rod. 14 no.8:36 Ag '63.
(MIRA 16:8)

(Balloon ascensions)

AGRANOVSKIY, I.; ARANOVICH, B.; BELYAYEVA, V.; BOL'SHAKOV, A.; GRUZDEV, V.; DICH, S.; ZELENTSOV, I.; KONKIN, A.; LEVIT, R.; MIKHAYLOV, N.; MOGILEVSKIY, Ye.; SERKOV, A.; SMELKOV, G.; SNETKOV, N.; SOROKIN, Ya.; SHIFRIN, L.

In memory of Vladimir Sergeevich Smurov, 1897-1965. Khim. volok. no.2:78 '65. (MIRA 18:6)

USSR/Farm Animals - General Problems. Q-1

Abs Jour : Ref Zhur - Biol., No 13, 1958, 33275

Author : Konkin, A.

Inst : Alma-Ata Institute of Zoology and Veterinary Medicine.

Title : The Development of Animal Husbandry and Feeding Centers in Regions Situated Between Ili and Karatal Rivers.

Orig Pub : Sb. nauchn. tr. obshchestv.-ekon. kafedr Alma-Atinsk. zoovet. in-ta, Alma-Ata, 1957, 14-100

Abstract : No abstract.

Card 1/1

KONKIN, A. A. Cand.Tech. Sci.

Dissertation: "Development of a New Method for Separating Cellulose from Wood." Moscow Textile Inst, 23 Oct 47.

SO: Vechernyaya Moskva, Oct, 1947 (Project #17836)

CA

23

Comparison of esterification conditions and properties of xylan and cellulose. A. A. Kuznin and Z. A. Rogovin. *Zhur. Prikład. Khim.* (J. Applied Chem.) **23**, 536–44 (1950).—The soly. of xylan specimens in dil. alkalies is much higher than is that of degraded cellulose hydrate; the xylan specimens were prepd. from straw by 2-hr. boiling with H_2O, then with 5% NaOH in an atm. of N for 48 hrs. at 20°, followed by addn. of MeOH and neutralization by AcOH; the product contained 3.2% MeO and 0.44% CO_2H groups and was a dense gray solid. Its treatment with ClO_2 (0.3%) at 18–20° for 2–4 days removed residual lignin, with consequent soln. and reppta. as the above. The alkali soly. is explained by a lack of primary side chain groups in xylane and a lesser total no. of OH groups, in comparison with cellulose; this reduces the interchain H-bond formation. Nitration of xylan (48% HNO_3, 45% H_3PO_4, and 10% P_2O_5 mixt. for 2–8 hrs. at 0–20°) gave 92–6% yields of nitroxylane, contg. 10.2–10.9% N, i.e., replacement of 1.65 OH units per mol. unit; the products were incompletely sol. in cellulose nitrate solvents (80% soln. in Me_2CO, for example). Acetylation by Ac_2O, Ac_2O-AcOH, with pyridine, H_2SO_4, HNO_3, or H_3PO_4 catalysts, for 1–4 hrs. at 30–140° (best at 70°) proceeds much faster than the reactions with cellulose, proper. Ac_2O alone at 140° causes partial acetylation; addn. of H_2SO_4 leads to significant hydrolysis, but H_3PO_4 used with Ac_2O-AcOH mixts. is most satisfactory for giving 100% yields of diacetylxylane, almost without hydrolysis; the product is sol. in solvents for completely acetylated cellulose ($CHCl_3$, CH_2Cl_2), is insol. in Me_2CO. Aeration of solns. of xylan in cuprammonium soln. or 8% NaOH at 25° results in progressive oxidation, as is the case with cellulose hydrate; hence a primary OH group is not necessary for this degradation.

G. M. Kosolapoff

KONKIN A.A.

KONKIN, A.A.; BUYANOVA, V.K.; VINOGRADOVA, L.M.; ROGOVIN, Z.A.

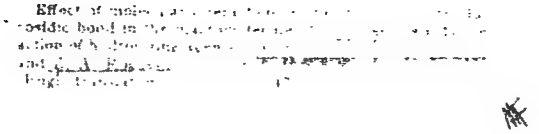
Effect of the composition and structure of monoses and aglucons on the resistance of glucosides to the action of acids. Soob.o nauch. rab.chl.VKHO no.3:1-5 '53. (MIRA 10:10)
(Hydrolysis) (Glucosides)

KONKIN, A.A.; KRYLOVA, R.A.; ROGOVIN, Z.A.

Effect of intermolecular interaction on the resistance of the glucoside bond in a cellulose macromolecule, to the action of hydrolyzing reagents. Koll.zhur. 15 no.4:246-251 '53. (MLRA 6:8)

1. Moskovskiy tekstil'nyy institut. Kafedra iskusstvennogo volokna. (Cellulose) (Hydrolysis)

Rowkin, A.A.



KONKIN, A. A.

(3)

C.A. V-48
Jan 10, 1954
Cellulose &
Paper

Delignification of wood with ethylene glycol. A. A.
Konkin and Z. A. Rogovin (Moscow Textile Inst.). Bum.
Prom. 28, No. 9, 15-19(1953).—A no. of variables in
the delignification of wood with ethylene glycol (I) were
studied. Spruce-wood flour (150 g.) [8-10% H_2O, 55.6%
Cross and Bevan cellulose, 11% pentosans, and 25.4%
lignin (II)] in a 10-fold amt. of I contg. HCl catalyst was
heated at various temps. and for various times, and the
pulp sepd., washed with I and with hot H_2O, dried, and ana-
lyzed. The filtrate was concd. in vacuo at 120-40° to 15-
20% II and a total solids of 30-40%, the dark sirup washed
with H_2O, and II filtered, washed with H_2O, and dried at 100°.
At a HCl concn. of 0.02, 0.035, 0.05, and 0.10%, and
heated for 0.5 hr. at 180°, the pulp yield (III) was 57.3,
41.3, 40.9, and 40.5%; α-cellulose (IV) in pulp 78.50, 78.00,
77.55, and 77.15%; II in pulp 19.50, 1.43, 1.20, and 1.03%;
% pentosans (V) in pulp 4.34, 3.34, 1.49, and 1.40; Cu no.
(VI) of pulp 0.68, 1.45, 1.00, and 0.67; the yield of II from
the I ext. (as % of the total II dissolved (VII)) was 83.50,
89.00, 90.88, and 93.96. For a HCl concn. of 0.05%
and 180°, at 4, 8, 15, and 30 min., % III 43.8, 43.2, 41.0,
and 40.9; % IV 83.5, 79.5, 78.3, and 77.5; % II in pulp 2.9,
2.4, 1.4, and 1.2; % V in pulp 3.20, 2.82, 1.54, and 1.49;
VI 0.51, 0.70, 0.50, and 1.00; VII 88.5, 89.5, 90.0, and 90.9;
and degree of polymerization of pulp —, 620, 585, and 416.
At 160, 170, 180°, and 0.2% HCl, and at 160 and 180° and
0.1% HCl, the % III was 43.5, 40.3, 40.0, 55.3, and 40.9,
and the % II in pulp 3.7, 2.7, 1.2, 14.7, and 1.4. In a
study of the effect of I on cellulose, a sulfite pulp (VIII)
(contg. 87.3% IV, VI 1.6, and a cuprammonium viscosity
(IX) of 125 millipoises at 1% concn.) was heated 30 min.
at 180° with I contg. 0.05% HCl, 0.05% HCl and 0.05%
NH_4Cl, and 0.134% H_3PO_4; the % III (based on original
VIII) was 83.6, 90.5, and 91.8; % IV 58.0, 77.1, and 72.8;
VI 0.40, 0.40, and 0.60; and IX 39.7, 44.0, and 48.2 milli-
poises. When wood was hydrolyzed 2 hrs. at 100° with a
1% soln. of HCl (loss in wt. 21%, and polysaccharides dis-
solved 18-19%, of which 7-8% were pentosans and 11-
12% hexosans, with little change in II content), washed,
dried, and heated 1 hr. at 160° with I without catalyst,
65% of the II was dissolved; no II was removed from un-
hydrolyzed wood, and it is assumed that during hydrolysis
chem. bonds are split between a part of II and the hydrolyzed
hemicelluloses. Glycol lignin (X) could be solvent frac-
tionated: EtOH + 10% H_2O dissolved 70% X, anhyd.
EtOH 5%, Me_2CO 60-5%, and Me_2CO + 10% H_2O 90-
5%; undried X was sol. in AcOH, dioxane, PhOH, 1%
NaOH soln., C_5H_5N, and I, whereas X dried at 100° dis-
solved with considerable difficulty. The carbohydrate
content of undried X was 5.6%, made up of 3.12% pento-
sans and 2.48% hexosans; X pptd. from AcOH with H_2O
contained 1% carbohydrate. Upon treatment of X with a
5% soln. of H_2SO_4, it became insol. in I, AcOH, PhOH,
and 1% NaOH soln. For HCl concns. of 0.10, 0.05, 0.035,
0.02, 0.05, and 0.05% and extn. times of 30, 30, 30, 30, 8,
and 4 min., the VII was 93.96, 90.88, 89, 83.5, 89.5, and
88.5%; the % OH in X 8.79, 10.19, 10.54, 13.68, 10.34,
and 11.40; and the % OMe 14.1, 14.7, —, 15.39, 14.4, and
—, resp. The OMe content of unpurified X was 14.0%,
of X pptd. 3 times from AcOH 15%, of X pptd. from 1%
NaOH soln. 17%, and of X treated with 5% H_2SO_4 13%.
John Lake Keays

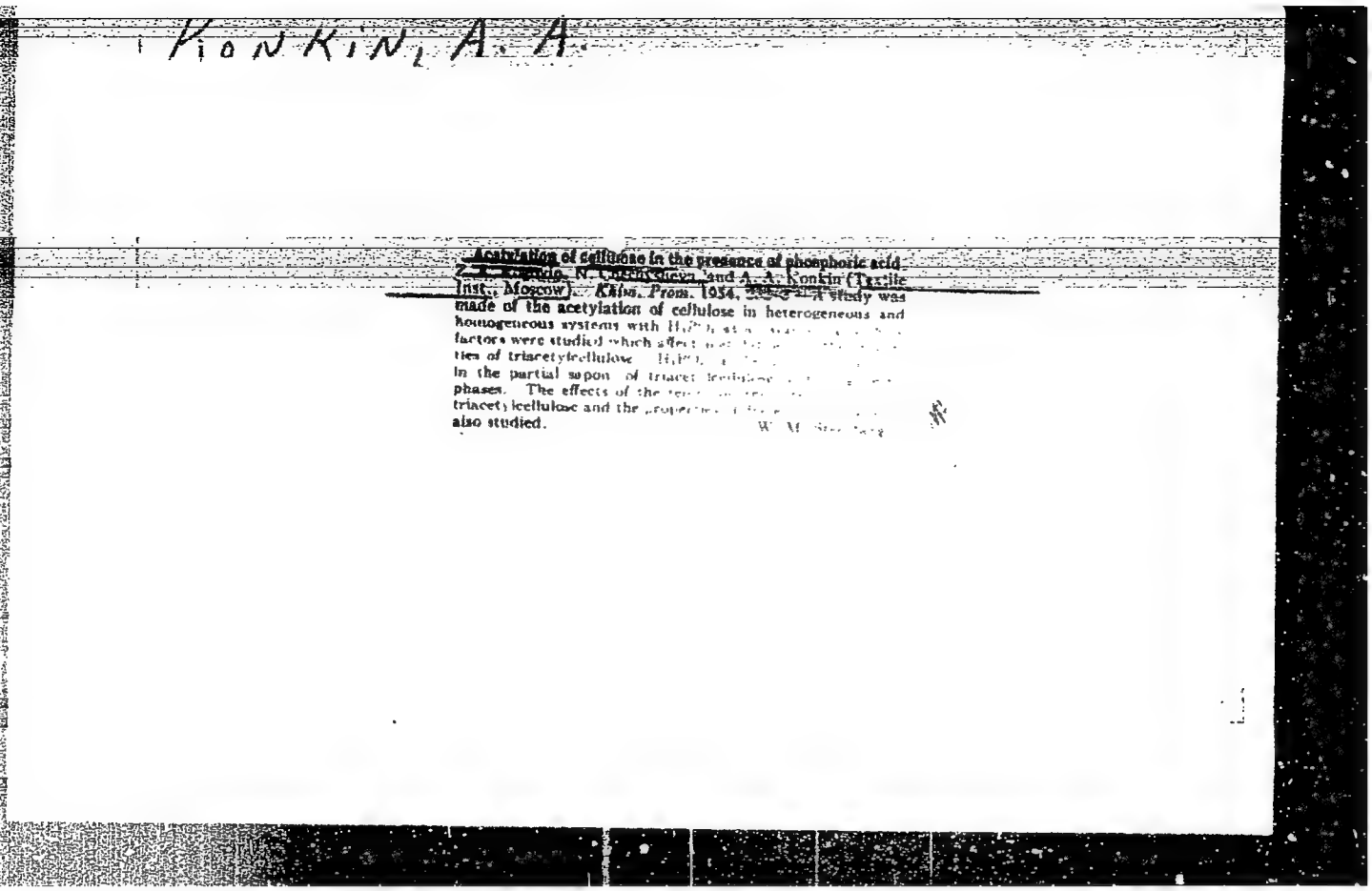
AF 7-13-54

KONKIN, A.A.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

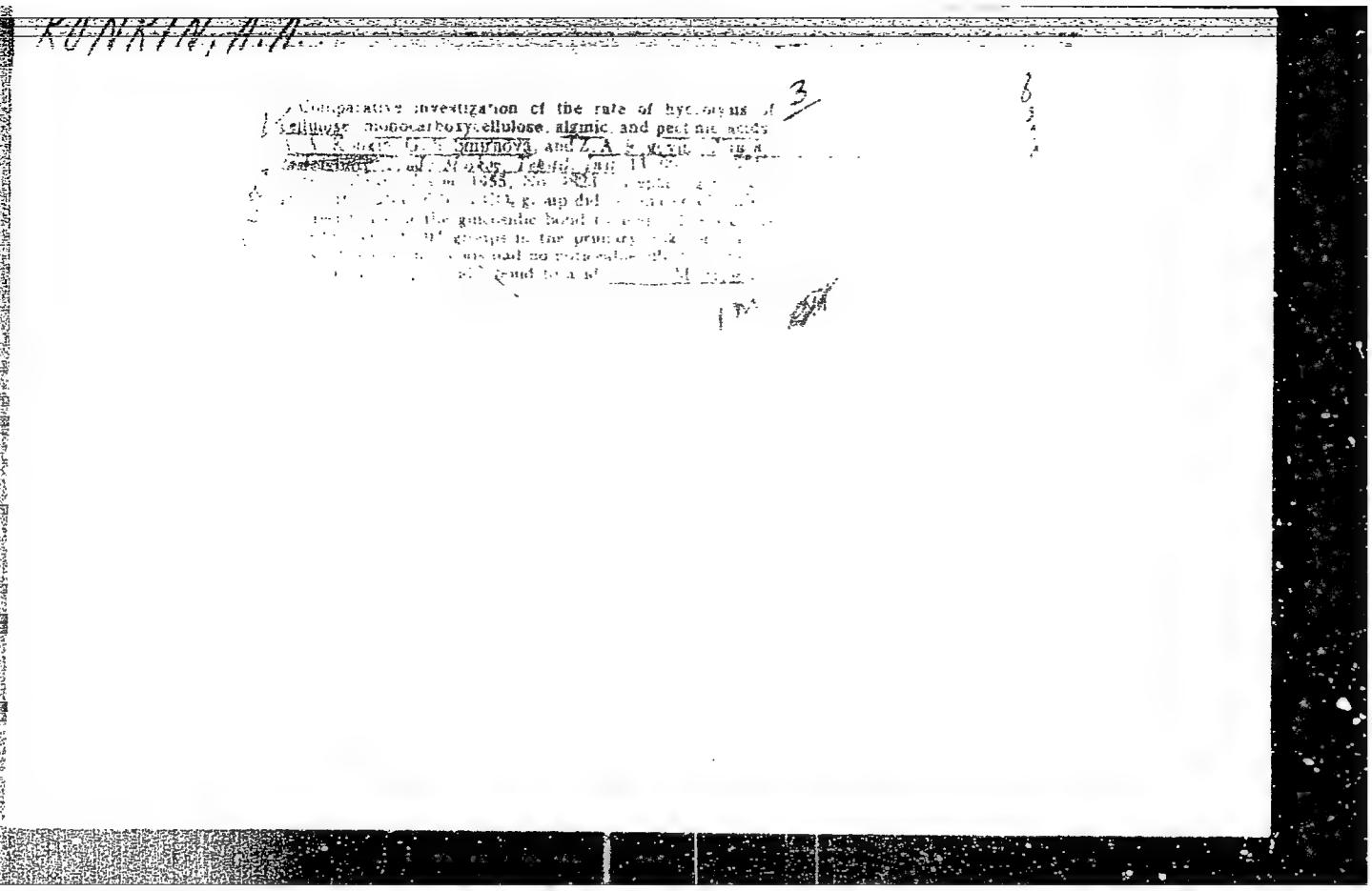
Name	Title of Work	Nominated by
Rogovin Z.A. Shorygina, N.N. Konkin, A.A.	"Chemistry of Cellulose and Associated Compounds"	Moscow Textile Institute

SO: W-30604, 7 July 1954



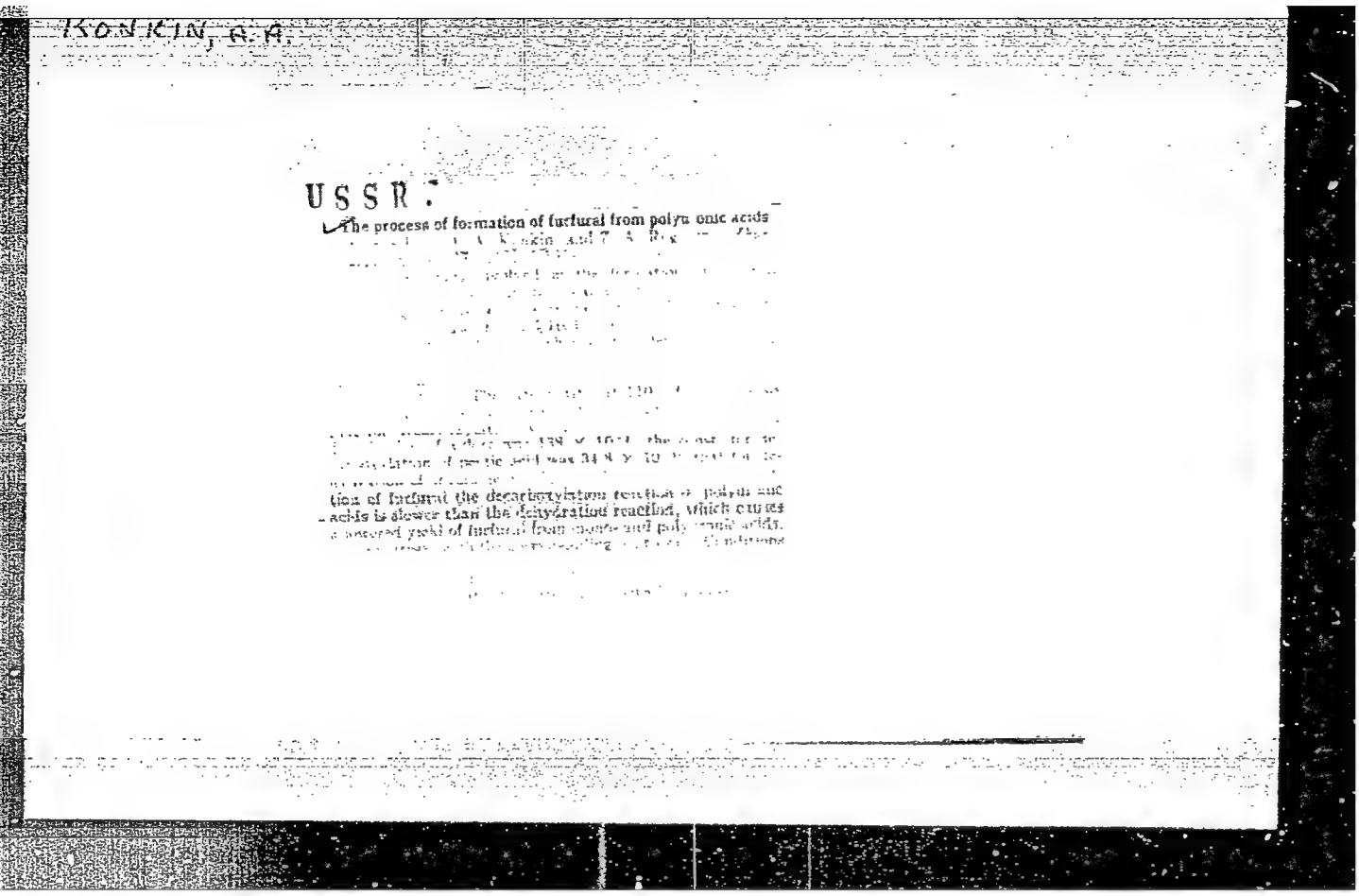
KONKIN, A. A.

Acetylation of cellulose in the presence of phosphoric acid. Z. A. Rogovin, N. [illegible] and A. A. Konkin (Textile Inst., Moscow). *Khim. Prom.* 1954, [illegible]. A study was made of the acetylation of cellulose in heterogeneous and homogeneous systems with H_3PO_4 as [illegible] factors were studied which affect [illegible] ties of triacetylcellulose [illegible] in the partial sapon. of triacet. [illegible] phases. The effects of the [illegible] triacetylcellulose and the [illegible] also studied.



KONKIN, A.A.

The process of formation of furfural from polyuronic acids. V. P. Kiseleva, A. A. Konkin, and Z. A. Kogo'tin. *J. Appl. Chem. U.S.S.R.* 27, 1073-6(1954)(Engl. translation). —See *C.A.* 49, 2940b. B. M. R.

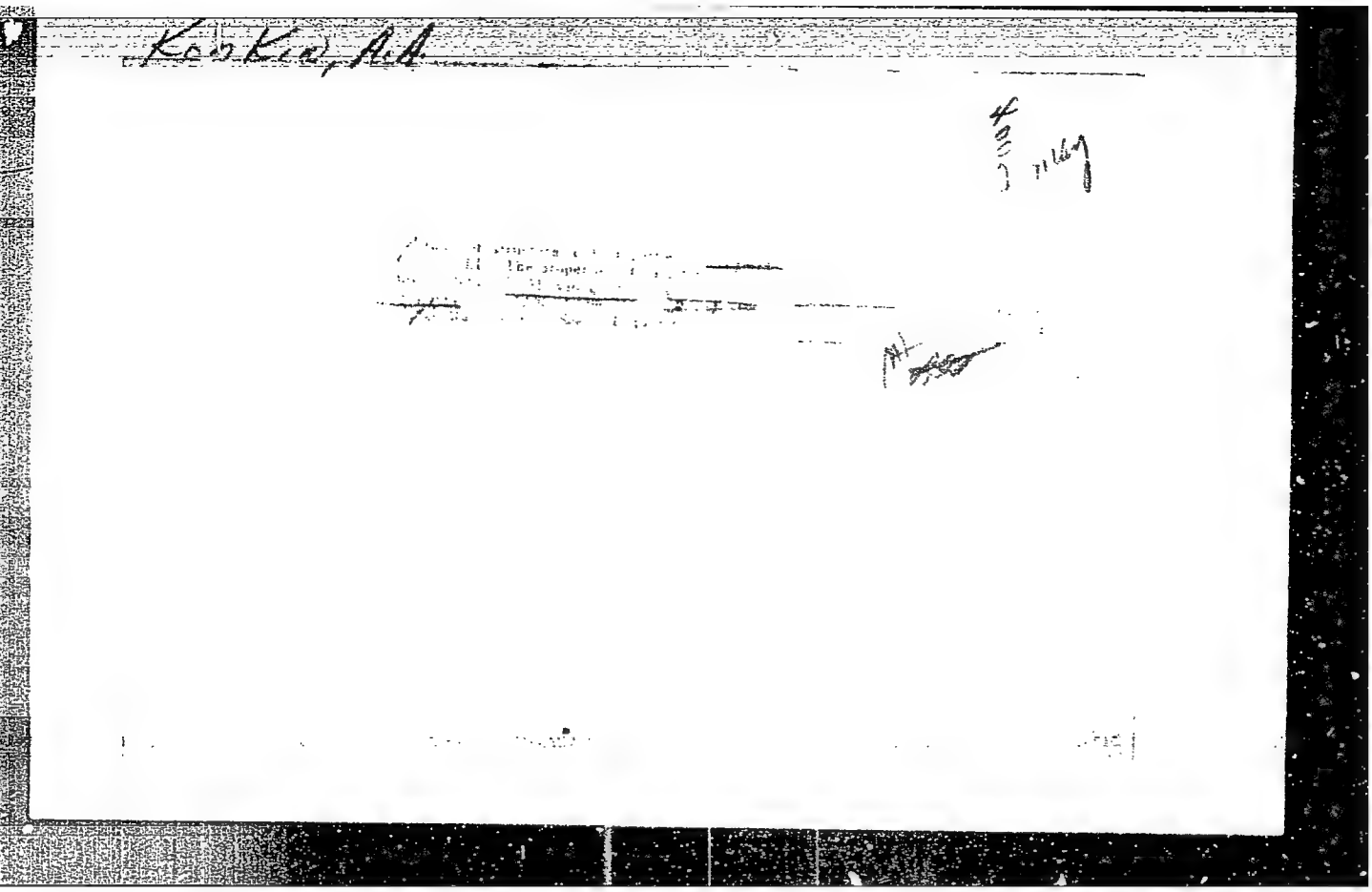


ISONKIN, A.A.

USSR

The process of formation of furfural from polyuronic acids

tion of furfural the decarboxylation reaction of polyuronic acids is slower than the dehydration reaction, which causes



KONKIN, A. A.

USSR

Study of structure and properties of cellulose and its esters. LI. The properties of galactan and cellulose and their esters. L. M. Vigorndova, A. A. Konkin, and Z. A. Rogovin (Moscow Textile Inst.). *Zhur. Prikhal. Khim.* 27, 1302-8(1954); cf. *C.A.* 49, 4537c.—The influence of the OH group at C atom 4 on the properties of cellulose (I) and galactan (II) of about the same mol. wt. and the same degree of polymerization (100 and 120, resp.) was studied. II was obtained from the pectins of the seeds of *Lupinus albus* by a modified method of Hirst, *et al.* (*C.A.* 42, 1203e). The properties were as follows: I was insol. in H_2O and its heat of swelling in 96% EtOH was 7.0 cal./mol.; II was sol. and its heat of swelling was 13.9 cal./mol., the H_2O absorption at 25° of II was 40–50% higher than that of I; acetylation of II was completed in 0.5 hr., that of I in 5.5 hrs.; the trinitrate of I was completely sol. in Me_2CO, that of II only 4.5% sol. The trinitrates were prepd. at 0° with a mixt. contg. HNO_3 45, H_3PO_4 and P_2O_5 10 wt. %. I. B.

B2

KONKIN, A.A.

Structure and properties of cellulose and its esters. Effect of character and position of functional groups in the elementary unit on stability of acetal linkage in molecules of di- and polysaccharides. Z. A. Rogovin, A. A. Konkin, and Yu. A. Rymashevskaya. *Voprosy Khim. Kinetiki, Kataliza i Reaktsionnoi Sposobnosti, Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1955, 321-32; cf. *C.A.* 49, 9269i; following abstr.—Replacement of the 1-CHO group by CO_2H greatly stabilizes the acetal linkage to hydrolysis in basic soln. CO_2H in the 6-position does not change the stability of acetal toward acids, but 1,6-dicarboxylation greatly accelerates hydrolysis under all conditions. Absence of the primary HO group reduces hydrolytic stability 3–4-fold. Increase of concn. of cellulose in aq. H_2SO_4 greatly reduces the rate of hydrolysis. G. M. Kosolapoff.

KONKIN, A.A.

Science in the service of industry. Tekst.prom.15 no.10:6-8 O'55.
(MLRA 8:12)

1. Nauchnyy rukovoditel' Vsesoyuznogo nauchno-issledovatel'skogo instituta iskusstvennogo volokna
(Textile fibers, Synthetic)

KONKIN, A.A.

Comparative study of the rate of hydrolysis of xylan and cellulose. A. A. Konkin, N. I. Kaplan, and Z. A. Rogovin. *J. Appl. Chem. U.S.S.R.* 28, 803-7(1955)(Engl. translation).—See C.A. 49, 14306. B. M. R.

CH

(2)

KONKIN, A.A.

USSR/Chemical Technology - Chemical Products and Their Application. Wood Chemistry Products. Cellulose and Its Manufacture. Paper, I-23

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63349

Author: Konkin, A. A., Kaplan, N. I., Rogovin, Z. A.

Institution: None Moscow Textile Inst. Chair of Artificial Fibers

Title: Comparative Investigations of the Rate of Hydrolysis of Xylan and Cellulose

Original Periodical: Zh. prikl. khimii, 1955, 28, No 7, 729-734

Abstract: Rate of xylan hydrolysis in a homogeneous medium is about 4 times and in a heterogeneous medium 70 times higher than that of cellulose. The principal factor that determines the higher rate of xylan hydrolysis, as compared with cellulose in a heterogeneous medium is not the composition of the elemental units but the different physical structure of these polysaccharides which determines the difference in intensity of intermolecular interaction.

Card 1/1

Konkin, A.A.

USSR/Chemical Technology. Chemical Products and Their Application--Synthetic fibers. I-26

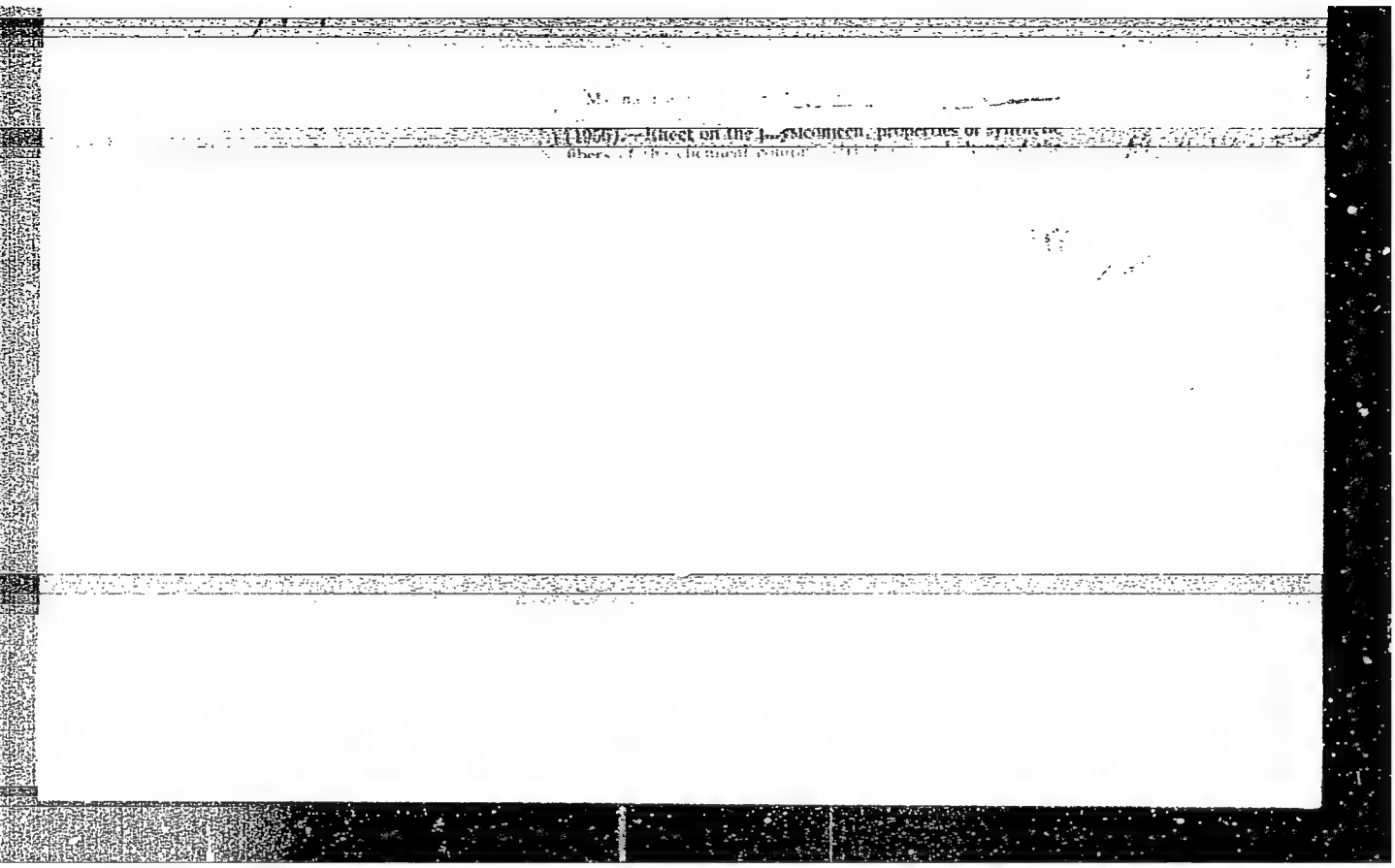
Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10084

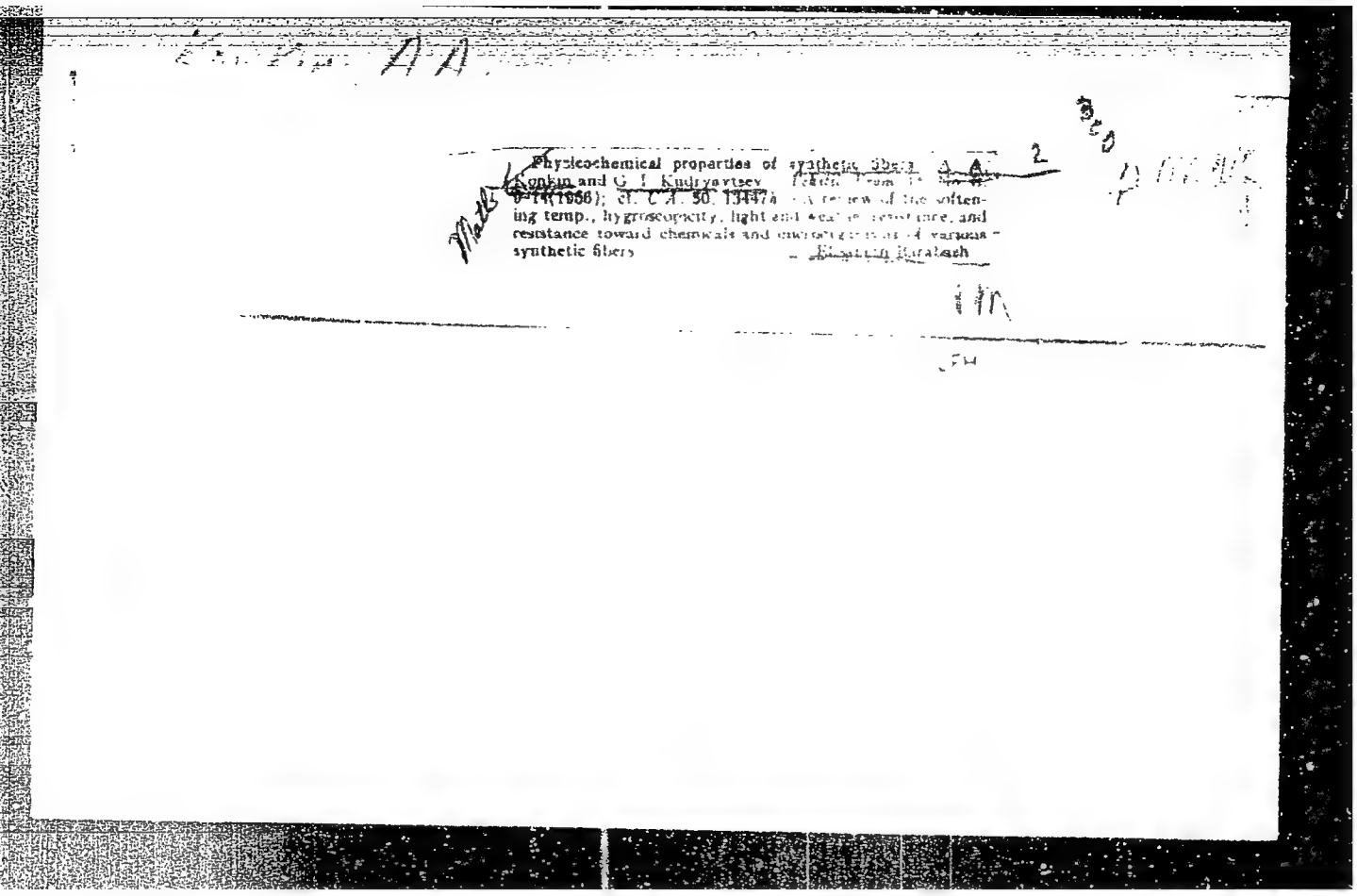
Author : Konkin, A. A. and Kudryavtsev, G. I.
Inst : Not given
Title : The Physicochemical Properties of Synthetic Fibers

Orig Pub: Tekstil'n. prom-st, 1956, No 8, 9-14

Abstract: A survey with a bibliography covering 7 items.

Card 1/1





Physicochemical properties of synthetic fibers
Konkin and G. I. Kudryavtsev
(1956); cf. C. A. 50, 13447h. A review of the softening temp., hygroscopicity, light and weather resistance, and resistance toward chemicals and microorganisms of various synthetic fibers.

KONKIN, A.A.

NESMEYANOV, A.N.; KNUNYANTS, I.L.; SHEMYAKIN, M.M.; BOGOSLOVSKIY, B.M.; SKURATOV, S.M.; KONKIN, A.A.; DEREVITSKAYA, V.A.; ROGOVIN, Z.

In memory of A.A. Strepikheev; obituary. Zhur.ob.khim.26 no.11:3224-3226 N '56. (MLRA 10:1)
(Strepikheev, Aleksandr Aleksandrovich, 1912-1955)

PAKSHVER, A.B., doktor tekhn.nauk, red.; KOMKIN, A.A., doktor tekhn.nauk, red.; KUKIN, G.N., doktor tekhn.nauk, red.; GUSEVA, Ye.M., red.; MEDVEDEV, L.Ya., tekhn.red.; KOGAN, V.V., tekhn.red.

[Handbook of analytical control in the manufacturing of artificial and synthetic fibers] Spravochnik po analiticheskomu kontroliu v proizvodstve iskusstvennykh i sinteticheskikh volokon. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1957. 565 p. (MIRA 11:2)

(Textile industry--Quality control)

KONKIN, A. A. Doc Tech Sci -- (diss) "~~Research on the relative stability of acetate~~ "Study of comparative resistance acetal bond ~~connection~~ in cellulose and ~~the~~ other polysaccharides to under the action of hydrolizing reagents" Mos, 1957. 28 pp (with graphs) 21 cm. (Min Higher Ed USSR. Mos Textile Institute), 120 copies

(KL, 20-57, 83)

KONKIN, A.A.; KOTINA, V.Ye.; DEMINA, N.V.

Effect of the scale factor on the properties of man-made fibers.
Tekst. prom. 17 no.8:20-23 Ag '57. (MLRA 10:9)
(Textile fibers, Synthetic--Testing)

KONKIN, A.A.

KONKIN, A.A., kand. tekhn. nauk; PETUKHOV, B.V., kand. tekhn. nauk.

Production of dacron fibers in the U.S.S.R. Tekst. prom. 18 no.1: 15-16 Ja '58. (MIRA 11:2)

(Textile fibers, Synthetic)

FINKEL'SHTEYN, T.A.; NIKOLAYEVA, N.S.; KONOVALOVA, Ye.M.; KONKIN, A.A.
VERETENNIKOVA, T.P.

Cellulose grinding on a vibratory mill. Tekst. prom. 18 no.2:16-19
F '58. (MIRA 13:3)
(Cellulose)

MOTORINA, A.V.; KOMKIN, A.A.

Effect of temperature on strength and lengthening of chemical fibers. Tekst. prom. 18 no. 7:18-20 Jl '58. (MIRA 11:7)
(Textile fibers, Synthetic)

KONKIN, A.A.; RYMASHEVSKAYA, Yu.A.

Xanthogenation of the cellulose preparations. Zhur.prikl. khim. 31 no.3:459-465 Mr '58. (MIRA 11:4)
(Cellulose xanthates)

76-32-4-26/43

AUTHORS: Konkin, A. A., Shigorin, D. N., Novikova, L. I.

TITLE: The Infrared Absorption Spectra of Monosaccharides and Polysaccharides (Infrakrasnyye spektry pogloshcheniya mono- i polisakharidov)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 4, pp. 894 - 903 (USSR)

ABSTRACT: As an introduction the present paper explains the possibilities of the types of hydrogen bindings in mono- and polysaccharides and mentiones two basic types. It is pointed out that the investigations carried out hitherto by means of infrared spectroscopy for the purpose of determining the types of hydrogen binding by observing the position and diffusion of spectral bands of the OH-group of polysaccharides are insufficient. The present experiments deal with the investigations of mono- and polysaccharides as well as of polyatomic alcohols, with comparisons of the spectra being carried out to solve the problem of the function of the absorption spectrum of the hydroxyl

The Infrared Absorption Spectra of Monosaccharides and Polysaccharides

groups on their geometrical distribution within the molecule. The measurements were carried out by means of a ИКС-11 spectrometer with a Nernst rod as source of radiation; the results obtained are shown on tables and graphically as well. Among other it was observed that in d-glucoses and d-xyloses both types of hydrogen binding are existing (I. -O-H ....O-H...O-H and II. -O-H...O-H). The spectrum of d-galactosis shows two strong low-frequency bands 3120 and 3206 cm^{-1} which points at the presence of a greater number of bindings of type I. In the rest of the monosaccharides, on the other hand, also characteristic phenomena were observed, the explanation of which needs detailed structural investigations. The investigations of polyatomic alcohols showed that, for instance, a difference between mannite and xylite consists of the fact that the latter has more bindings of type I. Based on the spectral analyses of polysaccharides the energies of hydrogen bindings were determined and a closer classification of the relative intensity of

Card 2/3 intermolecular interactions was carried out. The energy changed

The Infrared Absorption Spectra of Monosaccharides and Polysaccharides

4 - 6 kcal., the highest value having been obtained with cellulose. As final conclusion the change of energy of the intermolecular interaction is given as follows: cellulose > amylosis > xylan > laminarine > galactan. There are 6 figures, 2 tables and 12 references, 5 of which are Soviet.

SUBMITTED: January 8, 1957

AVAILABLE: Library of Congress

1. Monosaccharides--Spectrographic analysis 2. Polysaccharides --Spectrographic analysis 3. Polyatomic alcohols--Spectrographic analysis 4. Infrared spectroscopy--Applications

KONKIN, A.A.; BIRGER, G.Ye.; GRUZDEV, V.A.; PAKSHVER, A.B.; TSVETKOVA, N.F., red.; SHPAK, Ye.G., tekhn.red.

[Synthetic fibers] Khimicheskie volokna. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1959. 50 p. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic)

PHASE I BOOK EXPLOITATION SOV/4054

Akademiya nauk SSSR. Institut nauchnoy informatsii

Khimicheskaya promyshlennost' SSSR (The Chemical Industry of the USSR) Moscow, Goskhimizdat, 1959. 457 p. Errata slip inserted. 4,100 copies printed.

Sponsoring Agency: USSR. Gosudarstvennyy nauchno-tekhnicheskiy komitet.

Ed.: R. S. Ross; Tech. Ed.: P. V. Pogudkin; Editorial Board: A. P. Vinogradov, S. I. Vol'fkovich, N. M. Zhavoronkov, M. I. Ivanov, V. S. Kiselev, I. A. Lunacharskaya (Scientific Secretary), S. S. Medvedev, B. D. Mel'nik, A. N. Planovskiy, A. Ya. Ryabenko (Chief Ed.), and A. V. Topchiyev.

PURPOSE: This book is intended for the personnel of the chemical industry. It will be of interest to the general reader interested in the development and structure of the Soviet chemical industry.

COVERAGE: This book contains 18 articles on various aspects of the Soviet chemical industry. Among the developments in the production of raw materials for the manufacture of chemical products discussed are: 1) the use of raw materials synthesized from natural gas and petroleum to replace food products in the production of synthetic rubber, alcohol, detergents, etc.; 2) the production of acetylene from natural and petroleum gases for the synthesis of vinyl chloride, acrilonitrile, chloroprene, trichloroprene, 1, 4-butadiene, and other organic substances, based on methods developed by M. G. Kucherov, A.Ye. Favorskiy and others; 3) the production of acetylene from saturated hydrocarbons by cracking methane (and its homologs) at 1450° in an electric arc between two special electrodes in a gas reactor, by pyrolysis (thermal oxidation) of methane in an improved furnace designed by N. S. Grinenko, by high-temperature pyrolysis of propane and butane in tubular furnaces, or by other methods of producing acetylene for the production of synthetic rubber, ethyl alcohol, and other organic substances; 4) the synthesis of halogen derivatives of aliphatic hydrocarbons for the production of solvents, refrigerants, pharmaceutical products, etc., and 5) the production of rubber accelerators from nitrogen-containing aliphatic hydrocarbons. The history of plastics production in the Soviet Union is reviewed, and names, locations, and products of plants as well as the names of outstanding personalities in the field are given. The technical level and prospects of further development of different branches of the plastics industries are also discussed

along with methods of manufacturing plastic articles. A special apparatus designed by Ye. M. Mogilevskiy and designated "VA" which permits preparation of viscose solution in one operation is discussed. It is being used to replace the complex, conventional equipment with great savings in space. General trends in the technology of synthetic fiber production are also discussed. A historical review of synthetic rubber production and the achievements of outstanding Soviet scientists in this field are given as well as names, locations and products of synthetic rubber plants. Rubber production and the manufacture of rubber goods are similarly reviewed. Statistical data and outstanding personalities in the development of the aniline dyes, paints and lacquers, mineral fertilizers, insecticides and fungicides, sulfuric acid, soda, mineral salts, radioactive and stable isotopes, and chemical reagents industries are given. Catalytic processes and automation and automatic devices used in the chemical industry are also discussed. Thirty-eight photographs included in the book show outside and interior views of some Soviet chemical industry plants, as well as their manufacturing, material-handling and laboratory equipment. Numerous personalities and facilities are identified in the body of the text. References accompany individual articles.

Gartar, M. I. The Plastics and Synthetic Resins Industry 75

Birger, G.Ye., and A.A. Konkin. The Chemical Fibers Industry 111

Zakharchenko, P.I. The Synthetic Rubber Industry 137

Smolyakov, A.V. The Resin Industry 168

Korolev, A.I. The Aniline Dye Industry 197

Belovitskiy, A.A. The Production of Lacquers and Paints 219

Mel'nikov, N.N. Chemical Means of Protecting Plants and Eliminating Weeds 234

Boreskov, G.K., and V.S. Chesalova. Catalytic Processes in the Chemical Industry 409

Belshin, N.N., and S.Ya. Pesta. Automation of the Chemical Industries 438

AVAILABLE: Library of Congress

Konkin, A.A.

SERKOVA, A.T.; KONKIN, A.A.; KOTOMINA, I.N.

Preparation of extra-strong viscose cord. Khim.volok. no.1: 15-21 '59. (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Rayon)

MANDEL'BAUM, D.I.; KONKIN, A.A.

Effect of the polydisperse state of cellulose on the physical and mechanical properties of viscose fibers. Report No.1. Khim.volok. no.1:22-26 '59. (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Cellulose) (Rayon)

SHUKALOVA, Ye.A.; KONKIN, A.A.

Kinetics of cuprammonium fiber swelling in water. Izv.vys.ucheb. zav.; tekh.tekst.prom. no.1:141-147 '59. (MIRA 12:6)

1. Moskovskiy tekstil'nyy institut.
(Rayon--Testing) (Textile chemistry)

PETUKHOV, B.V.; KONKIN, A.A.

Technology of the manufacture of the polyester fiber "lavsar". Khim. volok. no.2:11-16 '59. (MIRA 12:9)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Rayon)

MANDEL'BAUM, D.I.; KONKIN, A.A.; SHULYATIKOVA, N.V.

Effect of polydisperse state of cellulose on the physical and mechanical properties of viscose fiber. Part 2. Khim. volok. no.2:35-40 '59. (MIRA 12:9)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Cellulose) (Rayon)

MANDEL'BAUM, D.I.; KONKIN, A.A.

Effect of the natural structure of cellulose on the physical and mechanical properties of viscose fiber. Khim.volok. no.3:23-26 '59. (MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).
(Cellulose) (Rayon)

ARKHANGEL'SKIY, D.N.; ROGOVIN, Z.A.; KONKIN, A.A.

Effect of the concentration and nature of the acids and sulfates used on the speed of saponification of cellulose xanthate.
Khim.volok. no.4:23-26 '59. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna i Moskovskiy tekstil'nyy institut.
(Cellulose xanthate)

SERKOV, A.T.; KONKIN, A.A.; KOTOMINA, I.N.; SHUBINA, Ye.V.

Surface phenomena occurring in the system viscose - spinneret - precipitation bath. Khim.volok. no.5:31-33 '59. (MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).
(Viscose) (Rayon) (Surface chemistry)

ARKHANGEL'SKIY, D.N.; ROGOVIN, Z.A.; KONKIN, A.A.

Effect of the composition of the percipitation baths on the swelling of viscose fiber. Khim.volok. no.5:36-38 '59.
(MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV) i Moskovskiy tekstil'nyy institut (MTI).
(Viscose) (Rayon)

15(4)

AUTHORS: Serkov, A. T., Shevchenko, A. S., Kotomina, I. N., Konkin, A. A.

S/183/59/000/06/002/027
B004/B007

TITLE: The Application of Surface-active Substances in the Production of Viscose Fiber

PERIODICAL: Khimicheskiy volokna, 1959, Nr 6, pp 3-11 (USSR)

ABSTRACT: The present paper is based mainly on Western publications, the data of which have, in some cases, been checked by the authors' own experiments. The quality-improving effect produced by surface-active substances is pointed out (increase in the strength of viscose-cord by 50-70%). The conception of a surface-active substance (modifier) is defined and its mode of operation is explained. There follows a survey of the application of such modifiers in the mercerization, xanthogenation, and spinning of viscose-solutions. Mention is made of the investigation carried out by Ye. M. Lev of the emulsification of carbon disulphide by sebacic acids (Fig 1), where the most stable emulsion is obtained by means of sebacic acids with 5 to 7 C-atoms. Figures 2 and 3 show the effect of Berol visco 30 upon the rate of filtration and the clearness of the viscose. Table 1 in this connection gives the results obtained by E. Eloed, H. Rauch

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The Application of Surface-active Substances in the Production of Viscose Fibers

S/183/59/000/06/002/027
B004/B007

and K. Goetze (Ref 1). The influence exerted by the modifiers upon the elimination of air from the viscose is discussed. Oxyethylated aliphatic amines give less stable foam than sulphurized sebacic acids and oxyethylized alcohols. Tables 2 and 3 mention Western results (Refs 1, 2) concerning the necessary additions of modifiers and their effect upon keeping the spinnerets clean. Figures 4 to 7 show the effect of the concentration of H_2SO_4, $ZnSO_4$, Na_2SO_4, and of modifiers upon the adhesion of the viscose to the spinnerets according to reference 11, which was confirmed by experiments carried out by the authors. Table 4 shows various modifiers of Western origin (amines, quaternary ammonium compounds; polyoxyethyl derivatives), which are used for the purpose of obtaining strong viscose fibers. Table 5, figure 8 show the experimental results obtained by the authors, according to which amines with 7 to 9 C-atoms give particularly homogeneous fibers which swell only little in water. Table 6 shows the effect produced by the oxyethyl-group content of the modifier upon the properties of the fiber (Ref 16).

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The Application of Surface-active Substances in the Production of Viscose Fibers

S/183/59/000/06/002/027
B004/B007

Table 7 and figure 9 show the dependence of the effect produced by cyclopropane on the concentration of the coagulating bath (Ref 16). There are 9 figures, 7 tables, and 18 references, 6 of which are Soviet.

ASSOCIATION: VNIIV - Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna
(All-Union Scientific Research Institute for Synthetic Fibers)

Card 3/3

15(4)

S/183/59/000/06/003/027
B004/B007

AUTHORS: Sych, L. S., Kozlov, V. I., Petukhov, B. V., Konkin, A. A.

TITLE: The Utilization of Polymer-waste of the Production of Lavsan Fiber

PERIODICAL: Khimicheskiy volokna, 1959, Nr 6, pp 12-14 (USSR)

ABSTRACT: Among the waste in the production of the Lavsan fiber, a polyester fiber, the hanks of the godet wheels may be utilized without any special chemical treatment. They are disentangled on a device shown in figure 1, cut up into rayon fiber, and are used as filling medium for upholstered goods and winter clothing. The larger part of the waste (resinified polymer, waste products of the spinnerets, torn fibers) must, however, be decomposed to the initial product (dimethyl-terephthalate). The authors mention respective English patents (Refs 1, 2) and also their attempts at decomposing the polymer by hydrolysis in water or lye and by means of methanol. In water (7 parts by weight corresponding to one part by weight of polymer)

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The Utilization of Polymer-waste of the Production of Lavsan Fiber

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B004/B007

decomposition takes place at 20 to 23 atm within an hour, at 15 atm within 5 hours. The precipitated terephthalic acid is filtered off, dissolved and reprecipitated, and again methylated. In 5 to 7% NaOH (7 to 8 parts by weight corresponding to 1 part by weight polymer) decomposition at 9 to 10 atm takes place within 1 to 2 hours (Table 1). The quantity of re-obtained terephthalate depends on the shape and the size of the waste products. Decomposition by means of methanol is especially recommended, because methanol is a waste product of Lavsan production, directly forms dimethyl terephthalate, and therefore requires no further chemicals (Table 2). The dimethyl terephthalate yield depends on the molecular weight of the polymer (Fig 4) and on the catalyst used in its synthesis (potassiumantimonyl tartrate, calcium acetate, zinc acetate, figure 3). The authors recommend 2 to 3 parts by weight of methanol corresponding to 1 part by weight of polymer, 26 to 27 atm, duration of reaction 3 to 6 h. There are 4 figures, 2 tables, and 2 references.

Card 2/3

KONKIN, A.A.; ROGOVIN, Z.A.

Role of molecular interaction in the hydrolysis of polysaccharides in a heterogeneous medium. Vysokom.soed. 1 no.2:177-181 F '59. (MIRA 12:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Polysaccharides) (Hydrolysis)

BUYANOVA, V.K.; KONKIN, A.A.

Rate of oxidation of polysaccharides in a homogeneous medium. Vysokom. soed. 1 no.6:889-893 Je '59. (MIRA 12:10)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Polysaccharides) (Oxidation)

MOTORINA, A.V.; KONKIN, A.A.

Effect of the medium on modifications in the mechanical properties of synthetic fibers during thermal treatment. Tekst. prom. 19 no.6: 52-55 Je '59. (MIRA 12:9)
(Textile fibers, Synthetic)

5(3)

SOV/80-32-4-26/47

AUTHORS: Konkin, A.A. and Rogovin, Z.A.

TITLE: The Principal Regularities in the Hydrolysis of Polysaccharides in Homogeneous and Heterogeneous Media (Osnovnyye zakonomernosti gidroliza polisakharidov v gomogennoy i geterogennoy sredakh)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 852-857 (USSR)

ABSTRACT: The present paper represents the 73rd communication from the series of investigations into the structure and properties of cellulose, and the 12th communication from the series of investigations into the process of hydrolysis of polysaccharides. The authors discuss certain general regularities in the hydrolysis of polysaccharides in homogeneous and heterogeneous media and cite the data on the correlation of hydrolysis rates of polysaccharides, disaccharides and "monozid"s under various conditions in a table. The conclusions drawn by the authors from their own experiments and from literature data are as follows: 1. The acetal bonds of polysaccharides differ insignificantly in resistance to the action of hydrolyzing agents. As far as relative resistance of acetal bonds to the action of acids is concerned, the polysaccharides can

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The Principal Regularities in the Hydrolysis of Polysaccharides in Homogeneous and Heterogeneous Media

be arranged in the following series of decreasing resistance: chitin> cellulose>galactan>mannan>laminarin>xylan>amylose; 2. The resistance of acetal bonds with respect to the action of hydrolyzing agents does not depend, as a rule, on a degree of polymerization of polysaccharides; 3. The hydrolysis rate of polysaccharides in a heterogeneous medium is determined by their physical structure which, in its turn, depends on the peculiarities in the structure and composition of macromolecules. According to the relative rate of hydrolysis in a heterogeneous medium, the polysaccharides can be arranged in the following sequence: galactan>laminarin>xylan>amylose>mannan>cellulose> chitin.

There is 1 table and 11 references, 9 of which are Soviet, 1 English and 1 Danish.

SOV/80/32-4-26/47

The Principal Regularities in the Hydrolysis of Polysaccharides in Homogeneous and Heterogeneous Media

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fiber)

SUBMITTED: December 27, 1957

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5(3,4) SOV/80-32-5-26/52

AUTHORS: Konkin, A.A., Shukalova, Ye.A.

TITLE: On the Role of Diffusion in the Hydrolysis of Polysaccharides in an Heterogeneous Medium. Communication 13.

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1076-1080 (USSR)

ABSTRACT: The study of diffusion processes has a great significance for the hydrolysis of polysaccharides by weak solutions of acids. The energy of activation of the hydrolytic reaction found by the authors has the value of 26-30 kcal/mole which is characteristic for chemical processes. The chemical reaction rate increases faster with the temperature than the diffusion rate. The activation energy is nearly the same for polysaccharides in a homogeneous or a heterogeneous medium and for monosides and disaccharides in a homogeneous medium. The energy is therefore independent of the molecular weight, the composition, the structure of the elementary link and of the macromolecule. The activation energy in the hydrolysis of polysaccharides arises from the rupture of the acetal bond. The diffusion of water into cellulose was studied in viscose monofiber of 400-800 μ in diameter. Diffusion was determined by the degree of swelling, which was in-

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On the Role of Diffusion in the Hydrolysis of Polysaccharides in an Heterogeneous Medium. Communication 13.

vestigated at 17, 27 and 37°C. The energy of activation was determined by the graphic method as 7,800 cal/mole. This value is considerably below that of the hydrolysis of the acetal bond. The diffusion of the hydrolyzing agent has no effect on the reaction rate of the hydrolysis of polysaccharides. Sharkov has shown that the rate of hydrolysis of cellulose does not depend on the duration of the preliminary soaking in diluted acid.

There are: 5 tables, 1 set of graphs and 7 references, 6 of which are Soviet and 1 English.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Artificial Fiber)

SUBMITTED: December 31, 1957

5(3)

SOV/80-32-5-27/52

AUTHORS: Novikova, L.I., Konkin, A.A.

TITLE: The Effect of the Concentration of Acids on the Rate of the Hydrolysis of Polysaccharides. Communication 14.

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1081-1085 (USSR)

ABSTRACT: The acetal bond in low- and high-molecular compounds is resistant to the action of water. Its rupture is accelerated by catalysts, like acids, the activity of which is determined by their degree of dissociation. Zheltukhin, Korol'kov and Sharkov found that the rate of hydrolysis is proportional to the concentration of the acid /Ref 4/. The hydrolysis of cellobiose, cellulose, laminarin obtained from Laminaria Saccharina, and xylan prepared from straw according to konkin's and Rogovin's method /Ref 8/ is investigated here. Sulfuric acid of the concentration 15.77 - 50.98%, and hydrochloric acid of 7.04 - 22.4% were used as hydrolyzing reagents. The rate of hydrolysis of cellobiose increases faster than the concentration of the acids. A doubled concentration increase raises the hydrolysis rate 10 times, in laminarin even 15 times. A three-fold increase of the hydrochloric acid concentration increases the hydrolysis rate of xylan 40 times. The

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5(3)

SOV/80-32-5-47/52

AUTHORS: Petukhov, B.V., Konkin, A.A.

TITLE: The Combination of the Reactions of Reesterification and Polycondensation in the Synthesis of Polyethyleneterephthalate

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1171-1173 (USSR)

ABSTRACT: Polyethyleneterephthalate is the base of the polyester fiber "lavsan". It is produced by the reesterification of the dimethyl ether of the terephthalic acid and ethylene glycol to diglycol ether, and the polycondensation of the latter to polyethyleneterephthalate. Ethylene glycol is used in the quantity of more than two moles per one mole of diethyl ether. Experiments were made to use less than two moles in the reaction. For this purpose 0.05% of zinc acetate was used as a catalyst. The yield was approximately the same as in the ratio 2.5 : 1. The products obtained had a sufficiently high molecular weight, which could not be expected, if the unreacted methoxy-groups had blocked the ends of the chain. The formed ethyleneglycol remains in the sphere of reaction due to the increasing viscosity and the ratio may be therefore less than 2 : 1.

Card 1/2

SOV/80-32-5-47/52

The Combination of the Reactions of Reesterification and Polycondensation in the Synthesis of Polyethyleneterephthalate

There are: 1 diagram, 1 graph, 1 table and 2 references, 1 of which is Soviet and 1 English.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Artificial Fiber)

SUBMITTED: January 20, 1958

Card 2/2

Konkin, A. A.

15.5550

S/183/60/000/03/04/007
B020/B054

82063

AUTHORS: Geller, A. A., Konkin, A. A., Myagkov, V. A.

TITLE: Fractional Composition of Polyethylene Terephthalate

PERIODICAL: Khimicheskiye volokna, 1960, No. 3, pp. 10-12

TEXT: It is known that not only the mean molecular weight of the polymer but also its polydispersity exert an influence on the properties of artificial fibers. The greater the inhomogeneity of the polymer with respect to the molecular weight, the more irregular are the physico-mechanical properties of the fiber obtained. Polyester formation and determination of polydispersity of various polyesters was investigated by V. V. Korshak and co-workers. Papers by E. Turska-Kusmierz, T. Skuarski (Refs. 4, 5), and F. Rybnikář (Ref. 6) were concerned with the study of the composition of polyethylene fractions. In the present investigation, the authors studied the change in polydispersity of a polyester resin in polycondensation and repeated melting. The type of change in the composition of polyethylene terephthalate fractions was investigated by the authors under consideration of

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Fractional Composition of Polyethylene Terephthalate

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B020/B054

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conditions of the technological process which was conducted on a semi-industrial scale. This process was briefly described in the paper by B. V. Petukhov and A. A. Konkin (Ref. 9). A method of fractionating polyethylene terephthalate from 1% solutions in a phenol - chlorobenzene mixture (1:1) by means of benzine precipitation was studied. The character of the position of the differential distribution curves (Fig. 1) for two parallel experiments shows a fully satisfactory reproducibility of the results obtained in fractionating. The polyester resin Lavsan is produced via two basic stages - trans-esterification and polycondensation. Data on the polymer composition in the individual reaction stages are graphically shown in Figs. 2 and 3 under consideration of the change in polydispersity and chain growth in polycondensation of Lavsan. The content of low-molecular fractions in the individual resin samples of Lavsan is shown in the table. The differential distribution curves of the molecular weight of the resin before and after repeated melting are shown in Fig. 4. The character of the differential curves shows that the molecular weight of polyethylene terephthalate slightly decreases in repeated melting. The polydispersity of the resin changes only little. Besides, the authors found a distinct tendency to an increase

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S/183/60/000/003/011/016/XX
B004/B067

AUTHORS: Serkov, A. T., Konkin, A. A., Solov'yeva, N. I., and Fedorova, N. N.

TITLE: Study of Drawing in Spinning Viscose Fibers

PERIODICAL: Khimicheskiye volokna, 1960, No. 3, pp. 31-33

TEXT: The authors point to the great importance of plasticizing drawing to the strength of viscose fibers. They attempted to determine the conditions under which maximum drawing can be attained. In the present paper they describe their study of the effect of the γ_{CS_2} content of residual xanthogenate in the fiber, and its structure in the freshly spun state on the capability of being drawn. The effect of residual xanthogenate was studied by increasing the distance between the spinneret and the point where drawing sets in from 1 to 15 m. In this connection, γ_{CS_2} decreased from 11.0 to 6.0. Nevertheless, no changes were observed in the maximum drawing and in the mechanical properties of the fiber. In a second test

Card 1/2

KONKIN, A.A.; RYMASHEVSKAYA, Yu.A.; SHULYATIKOVA, N.V.

Chemical heterogeneity of cellulose xanthates. Khim.volok. no.4: 23-26 '60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Cellulose xanthate)

S/183/60/000/004/009/014/XX
B004/B075

AUTHORS: Shevchenko, A. S., Konkin, A. A., Serkov, A. T.

TITLE: Effect of Amines on the Spinning Process of Viscose Fiber

PERIODICAL: Khimicheskiye volokna, 1960, No. 4, pp.27-30

TEXT: In the introduction the authors state that the effect of various modifiers which are added to the viscose to improve the structure of the fiber has so far not been studied. Therefore, they attempted to study the effect of amines on the formation of the viscose fiber. They used 1) monoamines, i.e., a) a mixture of C_7-C_9 amines, b) a mixture of C_{13}-C_{15} amines, c) cyclohexylamine, and d) monoethanolamine; 2) secondary amines: diethylamine; 3) tertiary amines: triethylamine, and 4) polyamines: a) diethylene triamine, b) triethylene tetraamine. They studied the effect of these amines on the ripening of viscose, the degree γ of esterification of the xanthate, viscosity, and the decomposition rate of xanthate in the precipitating bath. All experiments were made with the same viscose: content of α-cellulose: 6.3%, alkali 6.3%, degree of ripening 9.5-10.5, admixture of 2% amine referred to α-cellulose. Composition of the precipitating bath 100 g/l H_2SO_4,

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100 g/l $ZnSO_4$, 240-260 g/l Na_2SO_4, temperature 45°C. Neutralization was made in a second bath with 60 g/l $NaHCO_3$ and 200 g/l Na_2SO_4. The xanthate content in the fiber and its swelling power were then determined by the known method of Ref. 5, and the structure of its cross section was studied. The following results were obtained: diethylamine and monoethanolamine exerted no or almost no influence on the precipitation process. Cyclohexylamine, diethylenetriamine, and triethylene tetraamine proved to be effective modifiers. They delayed the precipitation process so that the fiber contained by 2.5 to 3 times more xanthate. The cross section of the fiber was homogeneous, its swelling power was reduced from 130-135% to 80-85%. The effect of cyclohexylamine was examined in the pilot plant by means of a spinning frame of type ПН-300-ИЗ (PN-300-IZ). A rayon cord fiber with a 34-36 km breaking length was obtained. Hence cyclohexylamine was recommended as modifier in spinning viscose fiber. The surface tension of viscose was not influenced by amines. No chemical interaction has as yet been observed between amines and xanthate. The authors, however, assume the action of trithiocarbonates since in their absence cyclohexylamine does not essentially influence the decomposition of xanthate. There are 10 figures, 1 table, and 7 references: 3 Soviet, 6 US, 2 Austrian, 1 Belgian, 5 British, 2 French, 1 German, and 1 Swiss.

MANDEL'BAUM, D.I.; KONKIN, A.A.; VISHNYAKOVA, M.N.

Connection between the submicroscopic structure of natural and regenerated cellulose. Khim.volok. no.5:31-33 '60. (MIRA 13:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Mandel'baum, Konkin). 2. Leningradskiy tekstil'nyy institut imeni Kirova (for Vishnyakova).
(Cellulose) (Viscose)

MAYTEL', B.B. [Mithel, B.B.]; SEKSTON, U.R. [Saxton, W.R.]; MORGAN Dzh.Ye. [Morgan, J.E.]; YITKEMP, Dzh. [Witkamp, J.]; MATVEYEVA, Ye.I. [translator]; KONKIN, A.A., red.

Spinning of high-tenacity rayon from 100 per cent wood pulp. Khim. volok. no.5:71-77 '60. (MIRA 13:12)
(Rayon) (Woodpulp)

SHEVCHENKO, A.S.; KONKIN, A.A.; SERKOV, A.T.

Effect of hydroxyethylated amines on the process of spinning viscose fiber. Khim. volok. no. 6:28-30 '60. (MIRA 13:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Rayon spinning) (Amines)

KONKIN, Aleksandr Arsen'yevich; BIRGER, Georgiy Yefimovich; KAPLUNOV, A.S., red.; SAVCHENKO, Ye.V., tekhn.red.

[Miracle fibers] Chudesnye volokna. Moskva, Izd-vo "Znanie," 1961. 43 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.10, Molodezhnaia, no.5). (MIRA 14:3)

(Textile fibers, Synthetic)

S/183/61/000/001/002/006
B101/B205

AUTHORS: Konkin, A. A., Rogovina, A. A., Birger, G. Ye.

TITLE: Present stage and prospects of tire cord production

PERIODICAL: Khimicheskiye volokna, no. 1, 1961, 3-14

TEXT: This is a review of publications on the production of tire cord, which bases primarily on Western literature. In the Soviet Union, tire cord is produced from cotton, viscose and caprone fibers. As the Seven-year Plan (1959-1965) provides for a substantial increase of the production of viscose cord (2.8 times) and caprone cord (22 times), 91% of all tire cord will be made from synthetic fibers in 1965. The review is divided into five sections: 1) Achievements in the field of viscose and polyamide cord production. This section bases chiefly on Western literature. 2) Physicomechanical properties of viscose, caprone, and nylon cord. Besides several Western publications, mention is made of a paper by V. A. Kargin and a paper by M. B. Lytkina, Ye. Ya. Yaminskaya, V. F. Yevstratov, and Ye. V. Troshkina on impact tests: ВХ (VKh) cord withstood 50 impacts, cord "Super-super", 129, and caprone cord, 850. The optimum modulus and elongation have not yet

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Present stage and ...

been determined. Tests made by A. V. Motorina, A. A. Konkin, N. V. Mikhaylov,and others confirmed that the behavior of polyamide heated in an inert atmosphere differs from that heated in air. 3) Brief analysis of data on the testing and practical use of tires made from different types of cord. It is noted that the NIIShP (Scientific Research Institute of the Tire Industry) has made several tests of tires which showed that caprone cord is best suited for the purpose. This is ascribed to the poor quality of viscose cord. 4) Technical and economic data on the use of viscose and polyamide cord. This section deals with an investigation carried out by VNIIV (All-Union Scientific Research Institute of Synthetic Fibers) in cooperation with the Scientific Research Institute of the Tire Industry, in the course of which the highly stable cord no. 5.45/2/1 was compared with caprone cord no. 10.7/2/1. Both types were assumed to have a lifetime of 63,000 km. When putting the cost of viscose cord as 100%, the following figures are obtained for caprone cord:

Capital cost
Creation of the raw-material basis 138
Production of raw material and fiber 142

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Present stage and ...

Production of cord referred to a distance of 1000 km covered by the tire 96.7
Expenditure of work needed to produce the cord tissue 116
Prime Cost
Raw material 216
Cord tissue 181
Cord and rubber (per 1000 km) 101.8

The costs for sulfate cellulose and caprolactam were taken from planning figures. According to estimates of GIAP (State Design and Scientific Research Institute of the Nitrogen Industry) and of the All-Union Scientific Research Institute of Synthetic Fibers, the corresponding figures for anide fiber are 107% and 120%, respectively, when putting capital cost and prime cost of caprone cord fiber as 100%. The high price is due to the costs of АГ("AG") salt. According to I. Ye. Krichevskiy and N. P. Fedorenko, a price cut is possible by using non-aromatic starting materials, such as furfurol and butadiene. 5) Prospects of the use of other fibers in the production of tire cord. Reference is made to Western data on polyester, polyvinyl

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alcohol, polypropylene, and polyurethane fibers. The authors state that further research work would be necessary. They recommend caprone cord for the production of truck tires, and viscose cord for automobile tires. The development of caprone cord production intended in the Soviet Union does not exclude the production of nylon cord. V. L. Biderman and P. Kh. Drozhzhin are mentioned. There are 5 figures, 10 tables, and 53 references: 17 Soviet-bloc and 34 non-Soviet-bloc.

ASSOCIATION: MTI (Moscow Textile Institute): A. A. Konkin VNIIV (All-Union Scientific Research Institute of Synthetic Fiber): A. A. Rogovina, G. Ye. Birger

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S/183/61/000/005/003/003
B101/B110

AUTHORS: Wu Jung-jui, Rogovin, Z. A., Konkin, A. A.

TITLE: Grafting of polyacrylic acid on polypropylene fibers

PERIODICAL: Khimicheskiye volokna, no. 5, 1961, 18 - 20

TEXT: The present paper deals with the elimination of the disadvantages of pure polypropylene fiber (PPF): hydrophobic nature, poor colorability, slipperiness, and unpleasant "cold" feel. For this purpose, grafting of polyacrylic acid (PAA) on previously oxidized PPF was studied. PPF no. 35 of the VNIIV containing 6% of amorphous, 6% of stereoblock, and 88% of isotactic fraction was used. Oxidation was carried out by means of atmospheric oxygen at 100°C. The initial PPF had a breaking length of 37.4 km, an elongation of 32%. After 48 hr oxidation, the PPF contained 0.010% of hydroperoxide groups (HPOG) at a breaking length of 33.4 km and a 28% elongation. After 96 hr, the HPOG content was 0.031%, breaking length: 21.9 km, elongation: 14.7%. PPF oxidized for 48 hr was used for further experiments. Grafting of acrylic acid on oxidized PPF was conducted in sealed ampuls with a 50% aqueous solution of the acid in argon atmosphere.

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Grafting of polyacrylic...

The content of carboxyl groups in the grafted polymer was analytically determined after removal (washing-out) of the homopolymer (PAA). After 7 hr grafting, the following data were determined: with a 0.007% HPOG content at 65°C, no COOH groups had formed in the PPF, at 80°C, PPF contained 3.5% COOH. The data for 0.010% HPOG are: 65°C, 3.0% COOH; 80°C, 4.1% COOH; for 0.031% HPOG: 65°C, 10.7% COOH; 80°C, 17.3% COOH. The reaction time exerted an effect upon the content of COOH groups. This content was 2.3% after 3 hr grafting at 80°C; breaking length of PPF: 31.0 km, elongation: 24.9%. After 10 hr grafting, the COOH content was 14.0%, breaking length: 27.8 km, elongation: 23.0%. To inhibit the formation of the PAA homopolymer, crystalline $FeSO_4 \cdot 7H_2O$ was added as reducing agent in amounts equivalent to the HPOG content in PPF. The following data were found:

Time of grafting, hr	temperature, °C	content of COOH groups, %	breaking length, km	elongation, %
3	80	3.7	27.2	22.3
49	21	1.5	31.4	24.2
121	21	10.7	27.0	24.8

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Grafting of polyacrylic...

In the presence of $FeSO_4$, grafting has to take place in inert gas atmosphere, since in the presence of O_2, the Fe^{2+} ions act as catalysts in the oxidative destruction of polypropylene. Inhibition of the formation of homopolymeric PAA was confirmed by the fact that grafted PPF was soluble in acetone (in which PAA is insoluble) without turbidity in the presence of $FeSO_4$. Modified PPF was colorable by basic dyes. With a relative atmospheric moisture of 55.8%, PPF containing 8.2% COOH adsorbed 0.25% of the moisture, PPF containing 12.3% COOH, however, adsorbed 0.73%. There are 2 figures, 4 tables, and 8 references: 3 Soviet and 5 non-Soviet. The four references to English-language publications read as follows: G. Natta, J. Polymer Sci., 34, 685 (1959); D. J. Metz and R. B. Mesvolian, J. Polymer Sci., 16, 345 (1955); R. J. Orr, H. Levevne, Williams, J. Am. Chem. Soc., 79, 3137 (1957); R. Urwin, J. Polymer Sci., 27, 580 (1958).

ASSOCIATION: MTI

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KONKIN, A.A.; SERKOV, A.T.

Structure of cellulose. Vysokom.soed. 3 no.10:1610-1613 O '61.
(MIRA 14:9)

1. Nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Cellulose)

SERKOV, A.T.; KONKIN, A.A.; KOTOMINA, I.N.; SOLOV'YEVA, N.I.

Effect of the structure of freshly formed viscose fiber on stresses during spinning. Khim.volok. no.5:34-37 '61.
(MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Rayon spinning)

DRUZHININA, T.V.; ANDRICHENKO, Yu.D.; KONKIN, A.A.; ROGOVIN, Z.A.

Process of polyethylene fiber formation. Khim.volok. no.2:17-20 '62. (MIRA 15:4)

1. Moskovskiy tekstil'nyy institut.
(Polyethylene)

BORISOV, A.; BIRGER, G.; VOLKOV, A.; DICH, S.; DUSEYEVA, Ye.; KONKIN, A.A.; MEOS, A.; MIKHAYLOV, N.; MOGILEVSKIY, Ye.; POKSHVER, A.; ROGOVIN, Z.; SERKOV, A.; SHIFRIN, L.

On the 60th birthday of an honored worker. Khim.volok. no.2:79 '62. (MIRA 15:4)

(Grundev, Vasilii Alekseevich, 1902-)

NOVIKOVA, L.I.; KONKIN, A.A.; SHULYATIKOVA, N.V.

Effect of the degree of substitution of cellulose xanthate on the supermolecular structure of cord fiber. Khim.volok no.4:47-51 '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Novikova, Shulyatikova). 2. Moskovskiy tekstil'nyy institut (for Konkin).
(Cellulose xanthate) (Rayon)

NIKOLAEYVA, N.S.; KONKIN, A.A.

"Polynosic" (cellulose hydrate) fibers. Khim.volok. no.5:5-15 '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Nikolayeva). 2. Moskovskiy tekstil'nyy institut (for Konkin).
(Cellulose) (Rayon)

SHEVCHENKO, A.S.; KONKIN, A.A.; SERKOV, A.T.

Possibility of producing complex compounds with modifying agents during the process of viscose fiber formation. Khim.volok. no.5:27-30 '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Shevchenko). 2. Moskovskiy tekstil'nyy institut (for Konkin). 3. Gosudarstvennyy komitet khimicheskoy promyshlennosti pri Sovete Ministrov SSSR (for Serkov).

(Viscose)
(Complex compounds)